

Determination of Public Land (Rangeland) Health for 64083 CROSS HWY

The Record of Decision (ROD) for the New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management (dated January 2001) adopted three Standards for Public Land Health. These are (1) Upland Sites Standard, (2) Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species Standard and (3) Riparian Sites Standard.

The ROD also established a process for the BLM Field Offices for the implementation. Through a public participation process, the Roswell Field Office developed and adopted indicators to use in conjunction with existing monitoring data to assess these standards.

Field assessment worksheets and other available data that evaluate the local indicators were completed for this allotment. Based on the assessments, it is my determination that the public land within the Cross Highway allotment #64083 meets the Upland Sites standard and (2) Biotic Communities, including Native, Threatened, Endangered, and Special Status Species standard. There are no public land Riparian areas on this allotment, therefore this standard was not addressed.

/s/ T. R. KREAGER

Assistant Field Manager

09/09/2004

Date

Standards of Public Land Health

Evaluation of 64083 CROSS HWY Allotment

[03/13/2004]

The Roswell Field Office conducted rangeland health assessments at two (2) study sites within the Cross Hwy Allotment #64083. The assessments looked at the Soil/Site Stability, Hydrologic Function and Biotic Integrity indicators within the vicinity of each study site. Existing monitoring data was incorporated into and in support of the field assessment. The summary of each assessment is attached and shown in the following table.

Study Area or Assessment Area	UPLAND			BIOTIC			RIPARIAN		
	Meets	Monitor an Indicator	Does Not Meet	Meets	Monitor an Indicator	Does Not Meet	Meets	Monitor an Indicator	Does Not Meet
64083-SOUTH-A169	X			X			N/A		
64083-XHIGHWAY-N001	X			X			N/A		

Twenty-two indicators for Rangeland health were evaluated for the public land on the Cross Hwy allotment #64083. Ten of these assessed soil site stability, 11 hydrologic function and 13 biotic integrity. These qualitative assessments in conjunction with previous long-term quantitative data gathered on 9 range trend plot/study site locations were utilized to determine the rangeland health of the public land within the allotment. These data collections which were initiated in the late 1970's/early 1980's are scheduled and performed by the Roswell Field office every 5 years and include some or all of the following: ground and vegetative cover and composition, production, frequency and ecological condition.

The dry conditions occurring over the last several years have impacted this allotment and surrounding area. The allotment is located east of US Highway 285 near the junction NM State Road 13 south of Roswell, NM. This allotment has had a history of being split apart and then combined again. One permanent and non-permanent study site were evaluated on this allotment.

The non-permanent site is located in the southern portion of the allotment. The soil in this area is a Tencee-Upton association. Tencee soil is shallow (less than 20 inches) and occurs on the ridges and knolls and support a Shallow SD-3 ecological site. The indicators for soil attributes rated none to slight and slight to moderate categories; the hydrology attributes were also none to slight and slight to moderate categories; and the

biotic attributes in general followed suite, however, the functional/structural groups and annual production indicators rated as moderate.

The northern area has the larger block of public land (880 acres) and the permanent study is located in this area. Just west of the northern site and east of the highway is an active gravel pit; this site covers approximately 10 acres and the direct impacts of disturbance are localized. The soil is a Reakor-Tencee association; the Reakor soil ranges from 20 inches to more than 40 inches in depth and supports a Loamy SD-3 ecological site. The indicators for soil attributes ranged from moderate (bareground, soil surface resistance to erosion) to none to slight. The indicators for hydrology attributes ranged from moderate (bare ground, soil surface resistance to erosion and litter amount) to none to slight. The indicators for biotic attributes ranged from moderate (soil surface resistance to erosion, litter amount and annual production) to none to slight.

Based on the state and transitional models for this ecological site; the present vegetative state is a burrograss/tobosa community. In this state, it is expected to have large bare patches present. These areas expand and contract in relation to the precipitation regime. Based on the monitoring data, live vegetative cover has ranged from a recent low of 20% to greater than 60%.

Hydrology - Pasture South - The rills, water flow patterns, pedestals and/or terracettes, bareground, gullies, wind scoured, blowouts, and or deposition areas, litter movement, soil surface resistance to erosion, soil surface loss or degradation, plant community composition and distribution relative to infiltration and runoff, compaction layer, litter amount, and physical/chemical/biological crusts indicators have rated as none to slight or slight to moderate. Sand and gravel deposits of Quaternary pediment deposits outcrop in the area.

Pasture XHighway - The bareground indicator rated as moderate. The amount of bareground has possibly increased due to recent dry conditions and also wind and water erosion processes. Soil surface resistance to erosion rated in the moderate category, with the soil stability test showing some melting of interspace and under plant canopy soil samples. Organic matter is lacking on this site, which may reflect small amount of litter present. The litter amount rated in the moderate category. The decrease in litter amount suggests that the dry conditions have had a negative affect on the growing conditions which decreases the amount of litter that is produced. Additionally, the decrease in litter amount can have the effect of increasing the amount of bare soil. All other indicators rated as none to slight or slight to moderate. Sand and gravel deposits of Quaternary alluvial deposits outcrop in the area.

Wildlife - Evaluation of the integrity of the biotic community considered several indicators as attribute indices for the area of interest. Biotic indicators are interrelated with several other indicators, including soil/site stability, hydrologic function, and vegetation. Several indicators are singularly biotic and address the vegetative aspect of the ecological site description, such as annual production and invasive plants, as discussed above. Specifically, only two biotic indicators fell within the Moderate rating, annual production

and wildlife habitat for XHighway Pasture. South Pasture exhibited Moderate ratings for functional/structural groups and annual production.

In addition to the standard worksheet biotic factors, four specific wildlife indicators and descriptors are included in this evaluation. Wildlife habitat and population indicators rate Slight to Moderate and Moderate, primarily for pronghorn (*Antilocapra americana*), and a variety of game and non-game terrestrial species, including raptors. With respect to special status species, none are known to occur in the area of interest at this time and the habitat and population indicators are, therefore rated None to Slight.

XHighway Pasture, when compared to adjacent sites, does not exhibit the ground cover that could occur on the site. Vegetative diversity is very low, probably due to past grazing use. South Pasture exhibits a stable trend considering it is on shallow soil with creosote (*Larrea tridentata*).

It is the professional opinion of the Assessment Team, that the public land within the Cross Hwy allotment meets the Upland and Biotic standards. There are no Riparian areas on the allotment, therefore this standard was not addressed.

Recommendations: Wildlife - Segregate the public land at the XHighway Pasture study site to allow for vegetation recovery or re-seeding efforts.

RFOs Upland and Biotic Standard Assessment Summary Worksheet						
SITE 64083-SOUTH-A169						
Legal Land Desc	NENE 14 0150S 0250E Meridian 23		Acreage		360	
Ecosite	042CY025NM SHALLOW SD-3		Photo Taken		Y	
Watershed	13060007080 HAGERMAN					
Observers	SPAIN/NAVARRO		Observation Date		05/26/2004	
County Soil Survey	NM666 CHAVES SOUTH		Soil Var/Taxad			
Soil Map Unit	Tg		Soil Taxon Name		TENCEE	
Texture Class	NM666 L		Soil Phase		TENCEE- UPTON	
Texture Modifier	NM666 GRAVELLY LOAM					
Observed Avg Annual Precipitation			Observed Avg Growing Season Precipitation			
NOAA Annual Precipitation	8.88		NOAA Growing Season Precipitation		6.47	
NOAA Avg Annual Precipitation	12.76		NOAA Avg Growing Season Precipitation		10.45	
Disturbances and Animal Use:						
Part 2. Attributes and Indicators						
		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extrem e	Moderat e to Extreme	Moderat e	Slight to Moderat e	None to Slight
S H	Rills					X
Comments :						
S H	Water Flow Patterns				X	
Comments :						
S H	Pedestals and/or Terracettes				X	

Comments :						
S H	Bare Ground				X	
Comments :						
S H	Gullies					X
Comments :						
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments :						
H	Litter Movement				X	
Comments :						
S H B	Soil Surface Resistance to Erosion				X	
Comments :						
S H B	Soil Surface Loss or Degradation				X	
Comments :	Pebbles and gravel to surface					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments :	Minor effect					
S H B	Compaction Layer					X
Comments :						
B	Functional/Structural Groups			X		
Comments :	Now LATR2/LADI2 and Opuntia species					
B	Plant Mortality/Decadence					X
Comments :						
H B	Litter Amount				X	

Comments :						
B	Annual Production			X		
Comments :						
B	Invasive Plants				X	
Comments :						
B	Reproductive Capability of Perennial Plants				X	
Comments :						
S	Physical/Chemical/Biological Crusts				X	
Comments :						
B	Wildlife Habitat				X	
Comments :	Low rolling hills exhibiting Chihuahuan desert influence, especially on the shallower hill tops. Typical plants are creosotebush, prickly pear, dogweed and a variety of forb species. Adjacent swale dominated by tobosa grass. Relatively undisturbed isolated parcel fo public land north of Artesia, NM.					
B	Wildlife Populations				X	
Comments :	No specific wildlife population information at this time. Species of concern include pronghorn antelope and a variety of terrestrial non-game species.					
B	Special Status Species Habitat					X
Comments :	None known to occur					
B	Special Status Species Populations					X
Comments :	None known to occur					
Part 3. Summary						
A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.						
Standard		Extrem	Moderat	Moderat	Slight to	None

Attribute		e	e to Extreme	e	Moderat e	to Slight
S	Soil	0	0	0	6	4
H	Hydrologic	0	0	0	8	3
B	Biotic	0	0	2	7	4
<p>B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the <i>Does not Meet</i> column, Moderate becomes <i>May Need More Info</i>, and Slight to Moderate and None to Slight merge to form the <i>Meets</i> columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.</p>						
Attribute	Rationale	Does Not Meet	May Need More Info	Meets		
Soil		0	0	10		
Hydrologic		0	0	11		
Biotic		0	2	11		
<p>Site Notes: Pronghorn antelope habitat. Plant diversity of forbs is fair (bladderpods, croton, globemallow, plantago species and a variety of annual forb species).</p>						

RFOs Upland and Biotic Standard Assessment Summary Worksheet

SITE 64083-XHIGHWAY-N001

Legal Land Desc	SWSW 27 0140S 0250E Meridian 23	Acreage	880
Ecosite	042CY007NM LOAMY SD-3	Photo Taken	Y
Watershed	13060007080 HAGERMAN		
Observers	SPAIN/NAVARRO	Observation Date	05/26/2004
County Soil Survey	NM666 CHAVES SOUTH	Soil Var/Taxad	
Soil Map Unit	RI	Soil Taxon Name	REAKOR
Texture Class	NM666 L	Soil Phase	REAKOR- TENCEE
Texture Modifier	NM666 LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	8.88	NOAA Growing Season Precipitation	6.47
NOAA Avg Annual Precipitation	12.76	NOAA Avg Growing Season Precipitation	10.45
Disturbances and Animal Use:			

Part 2. Attributes and Indicators

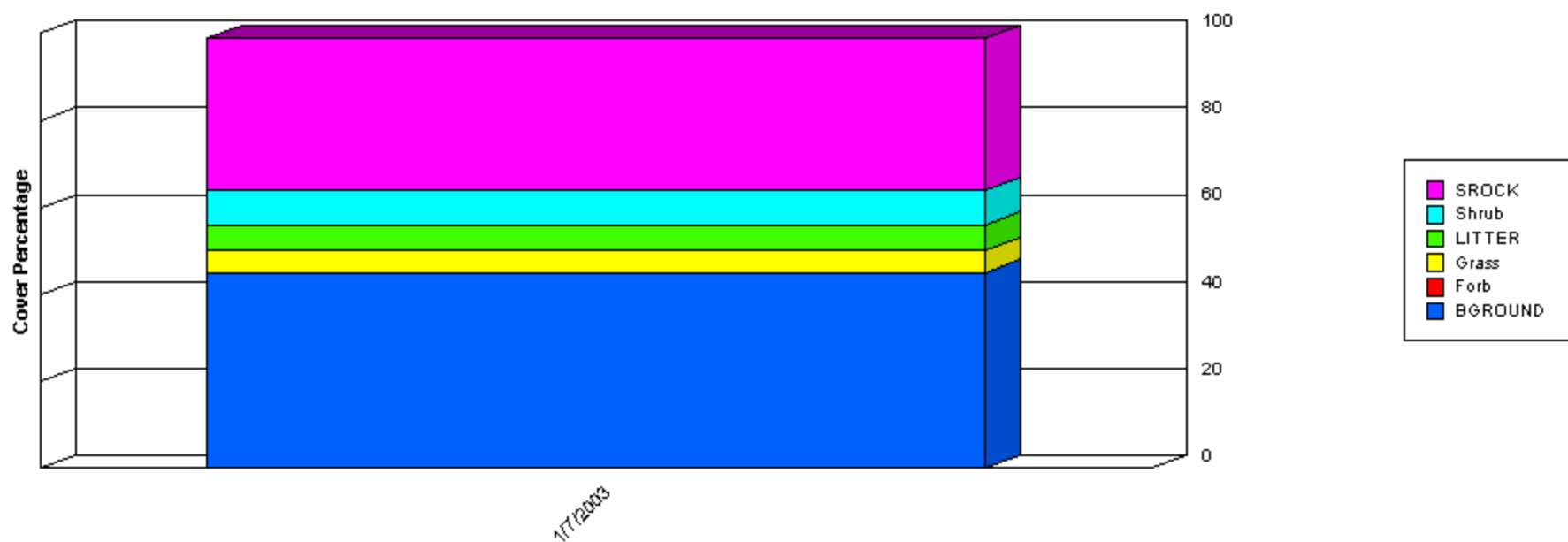
		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extrem e	Moderat e to Extreme	Moderat e	Slight to Moderat e	None to Slight
S H	Rills					X
Comments :						
S H	Water Flow Patterns				X	
Comments :						
S H	Pedestals and/or Terracettes				X	

Comments :						
S H	Bare Ground			X		
Comments :						
S H	Gullies					X
Comments :						
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments :						
H	Litter Movement				X	
Comments :						
S H B	Soil Surface Resistance to Erosion			X		
Comments :						
S H B	Soil Surface Loss or Degradation				X	
Comments :	Some A- horizon lost					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments :						
S H B	Compaction Layer					X
Comments :						
B	Functional/Structural Groups				X	
Comments :						
B	Plant Mortality/Decadence					X
Comments :						
H B	Litter Amount			X		

Comments :						
B	Annual Production			X		
Comments :						
B	Invasive Plants					X
Comments :						
B	Reproductive Capability of Perennial Plants					X
Comments :						
S	Physical/Chemical/Biological Crusts				X	
Comments :	Both biotic and physical					
B	Wildlife Habitat			X		
Comments :	Flat grassland habitat just east of Highway 285. Local disturbances include a large mineral material pit on private lands in the pasture and a major power transmission line. Quite a bit of bare ground where tobosa grass and burrograss should occur. Some Chihuahuan desert influence such as yuccas.					
B	Wildlife Populations				X	
Comments :	No specific wildlife population data at this time. Species of concern include pronghorn antelope and raptors.					
B	Special Status Species Habitat					X
Comments :	None known to occur					
B	Special Status Species Populations					X
Comments :	None known to occur					
Part 3. Summary						
A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.						
Standard		Extrem	Moderat	Moderat	Slight to	None

Attribute		e	e to Extreme	e	Moderat e	to Slight
S	Soil	0	0	2	4	4
H	Hydrologic	0	0	3	5	3
B	Biotic	0	0	4	3	6
<p>B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the <i>Does not Meet</i> column, Moderate becomes <i>May Need More Info</i>, and Slight to Moderate and None to Slight merge to form the <i>Meets</i> columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.</p>						
Attribute	Rationale	Does Not Meet	May Need More Info	Meets		
Soil		0	2	8		
Hydrologic		0	3	8		
Biotic		0	4	9		
Site Notes:						

Ground Cover Trends



	1/7/2003
BGROUND	45.00
Forb	0.00
Grass	5.00
LITTER	6.00
Shrub	8.00
SROCK	35.00
Total	99.00

Report Parameters

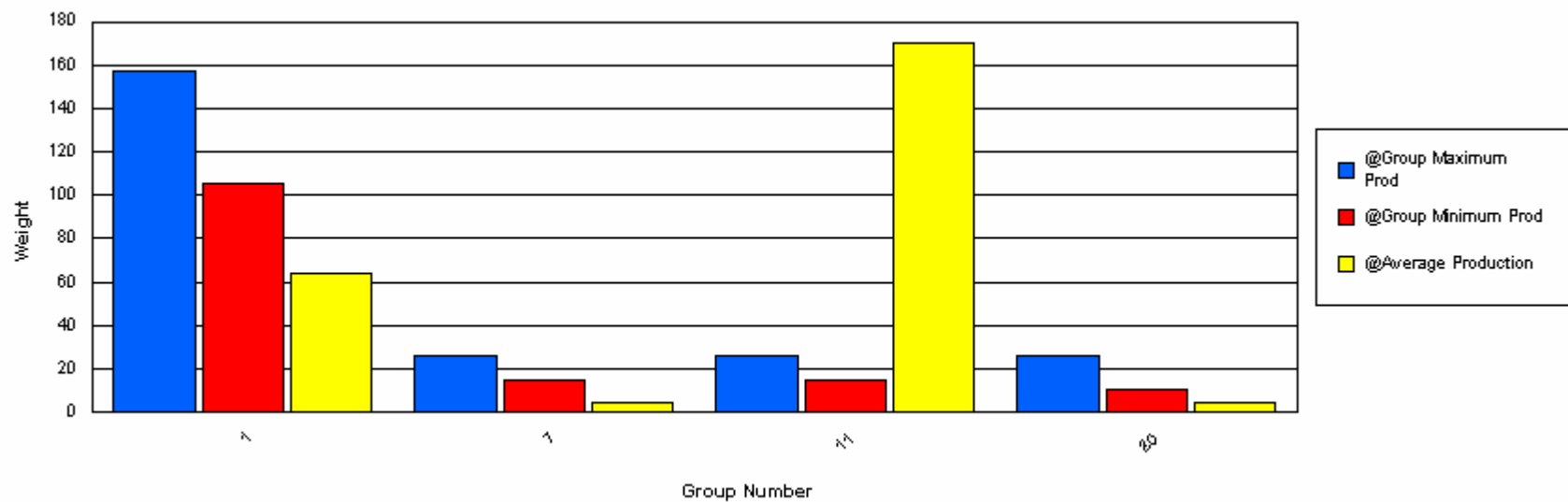
SITE NAME LIKE	64083-SOUTH-A169
ON/AFTER	10/01/1982
ON/BEFORE	09/30/2003

Functional / Structural Groups

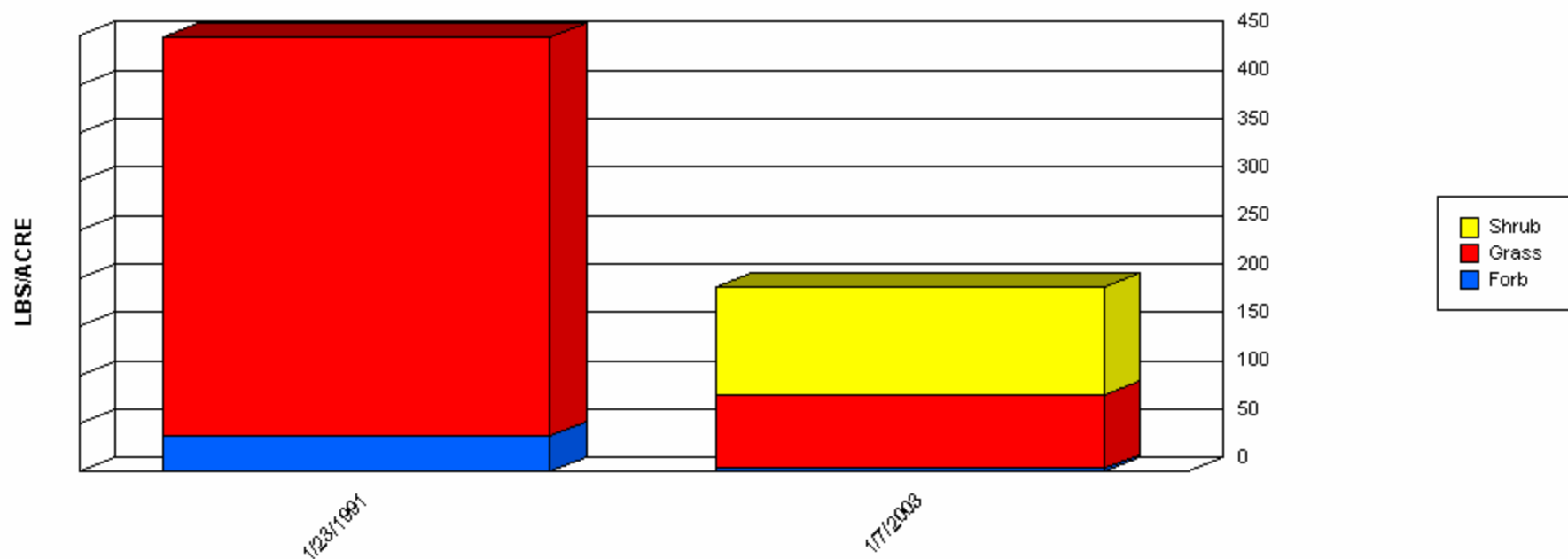
Report Parameters

SITE NAME LIKE 64083-SOUTH-A169
 ON/AFTER 10/01/1982
 ON/BEFORE 09/30/2003
 MIN LBS TO GRAPH 1
 SELECTED ECOSITE 042CY025NM

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
1	Grass	BOER4	105	157	8.50	119.00	63.75	55.25
7	Grass	TRMU	15	26	4.00	4.69	4.35	0.35
11	Grass	HIMU2	15	26	22.55	26.00	24.27	1.73
11	Grass	SCBR2	15	26	40.04	252.00	146.02	105.98
20	Forb	CROTO	10	26	1.23	8.00	4.61	3.39



Production Lbs/Acre Trends

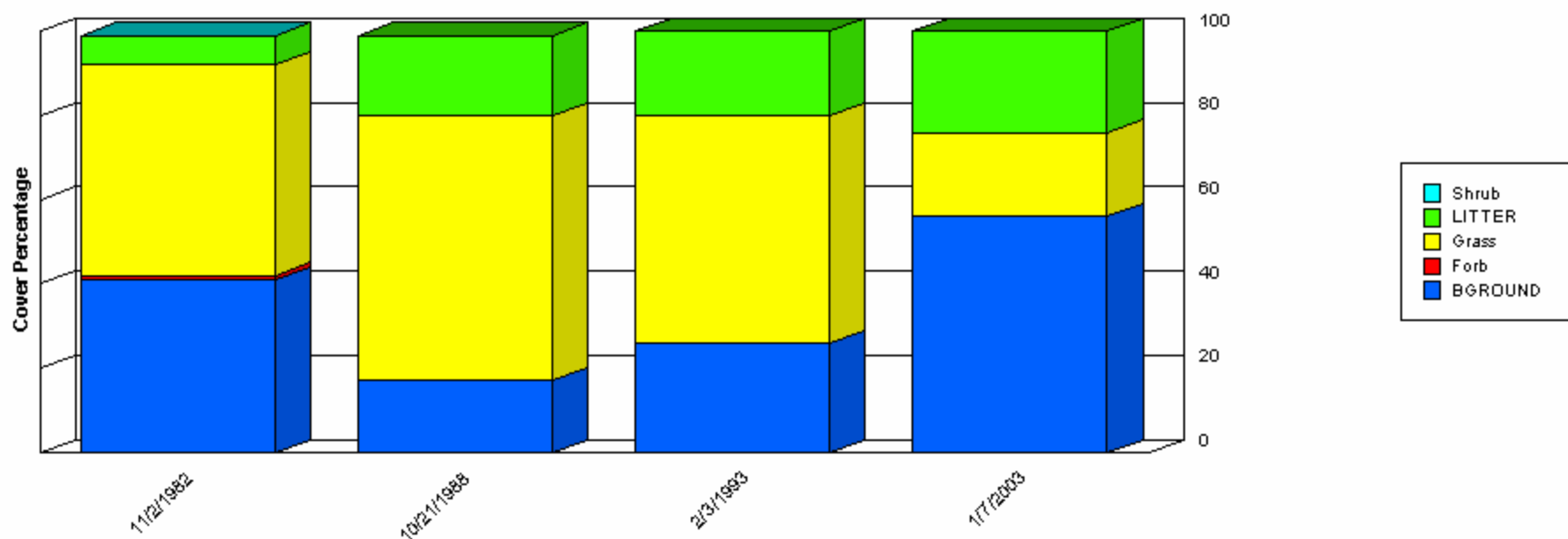


	1/23/1991	1/7/2003
Forb	38.00	3.49
Grass	410.00	75.78
Shrub	0.00	111.40
Total	448.00	190.67

Report Parameters

SITE NAME LIKE 64083-SOUTH-A169
 ON/AFTER 10/01/1982
 ON/BEFORE 09/30/2003

Ground Cover Trends



	11/2/1982	10/21/1988	2/3/1993	1/7/2003
BGROUND	41.00	17.00	26.00	56.00
Forb	1.00	0.00	0.00	0.00
Grass	50.00	63.00	54.00	20.00
LITTER	7.00	19.00	20.00	24.00
Shrub	0.00	0.00	0.00	0.00
Total	99.00	99.00	100.00	100.00

Report Parameters

SITE NAME LIKE	64083-XHIGHWAY-N001
ON/AFTER	10/01/1982
ON/BEFORE	09/30/2003

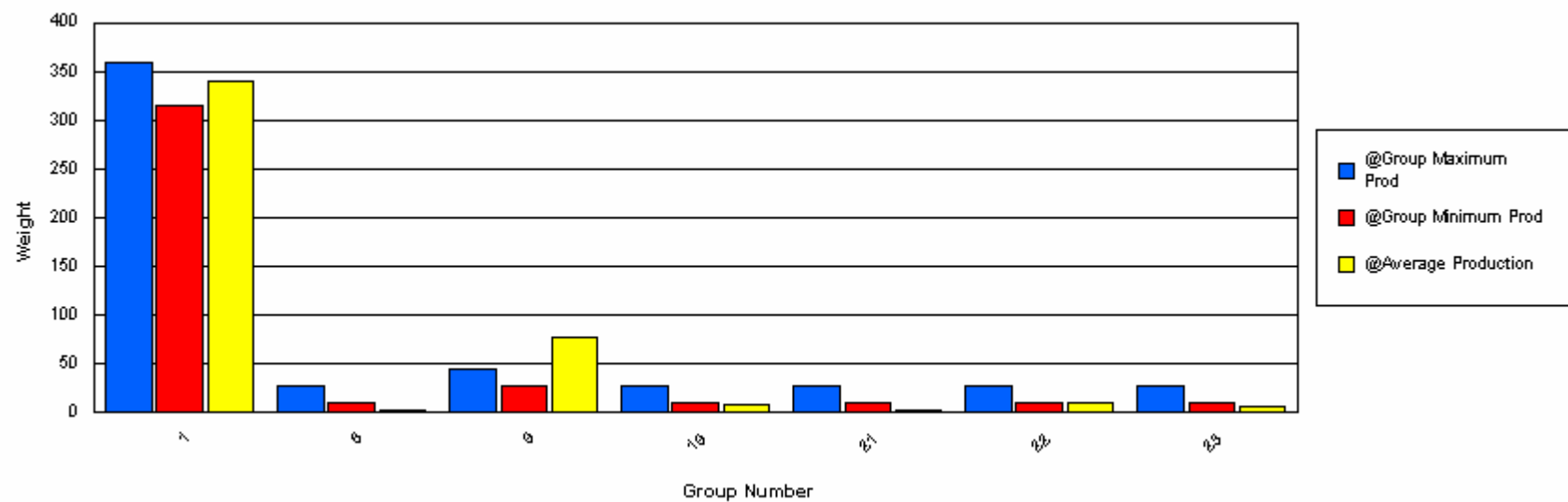
Functional / Structural Groups

Report Parameters

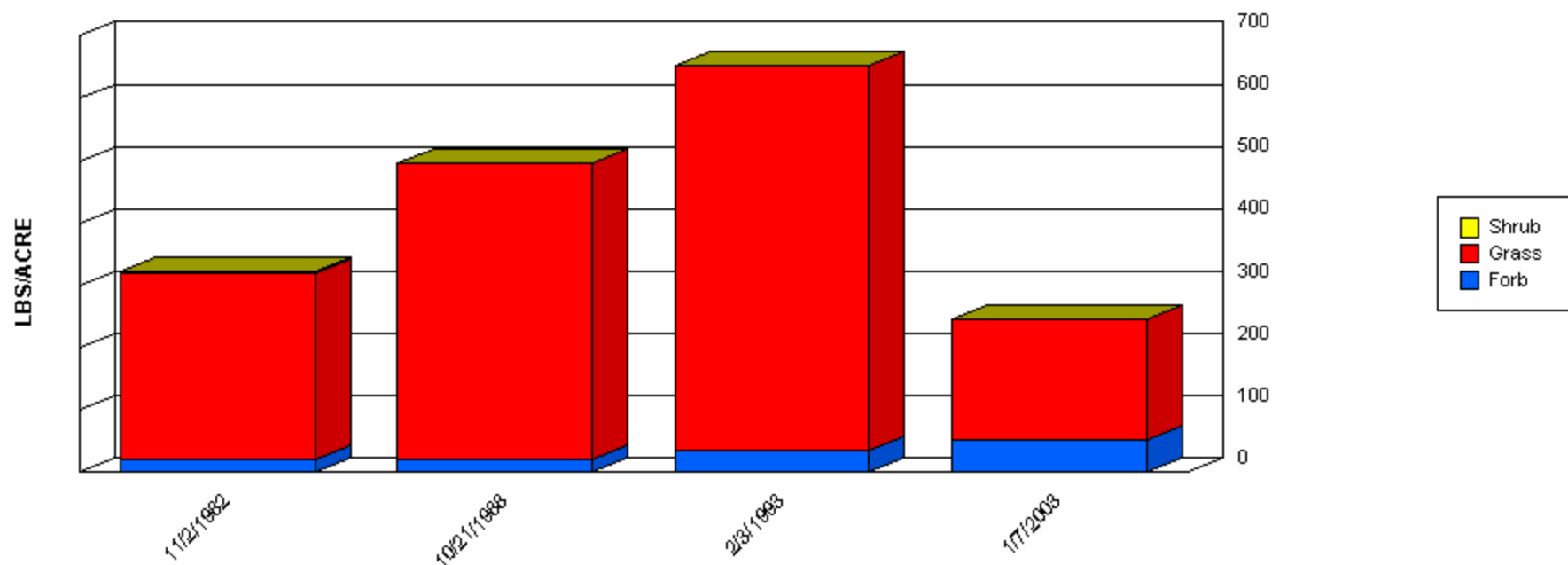
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 ON/AFTER 10/01/1982
 ON/BEFORE 09/30/2003
 MIN LBS TO GRAPH 1
 SELECTED ECOSITE 042CY007NM

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
1	Grass	HIMU2	315	360	75.35	273.18	165.98	74.77
1	Grass	SCBR2	315	360	117.69	253.80	174.49	50.66
8	Grass	PAOB	9	27	0.00	4.50	1.29	1.87
9	Grass	MUAR	27	45	0.00	100.87	31.38	41.36
9	Grass	MUAR2	27	45	0.00	90.00	45.00	45.00
12	Grass	PAHA	9	18	0.00	1.11	0.37	0.52
19	Forb	CROTO	9	27	0.00	13.72	4.16	5.65
19	Forb	PENA	9	27	0.00	5.88	2.63	2.66
21	Forb	ERODI	9	27	0.00	2.93	0.73	1.27
21	Forb	HOGL2	9	27	0.00	1.10	0.28	0.48
22	Forb	AAFF	9	27	0.00	34.72	9.27	14.71
23	Forb	AMBRO	9	27	0.00	15.20	5.68	6.29
24	Forb	SOEL	9	27	0.00	1.68	0.79	0.79
25	Shrub	EPTO	9	27	0.00	0.79	0.20	0.34

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
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Production Lbs/Acre Trends



	11/2/1982	10/21/1988	2/3/1993	1/7/2003
Forb	22.18	22.00	34.72	51.47
Grass	298.79	474.84	616.98	193.53
Shrub	0.79	0.00	0.00	0.00
Total	321.76	496.84	651.70	244.99

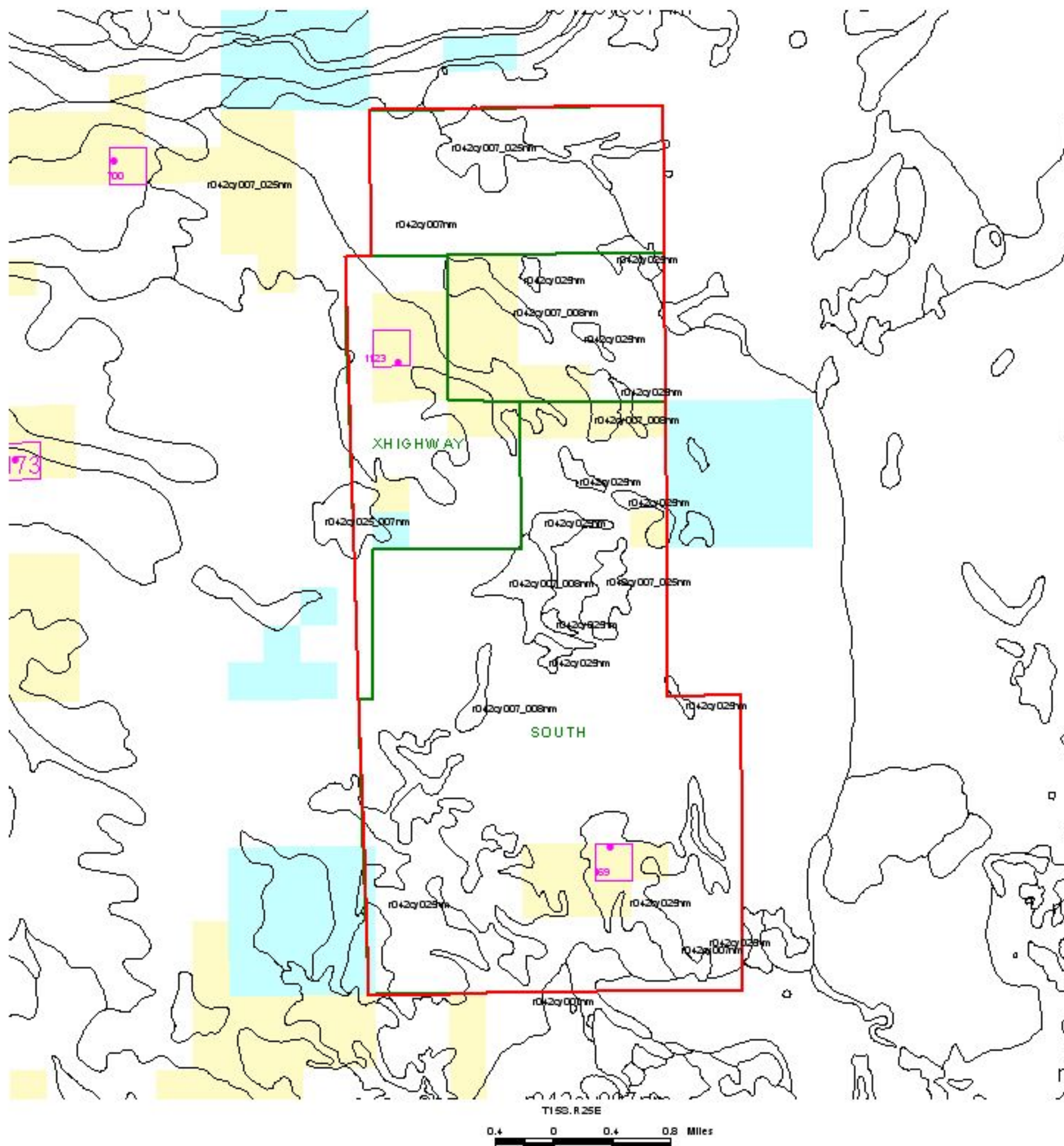
Report Parameters

SITE NAME LIKE 64083-XHIGHWAY-N001
 ON/AFTER 10/01/1982
 ON/BEFORE 09/30/2003



Rangeland Health Assessment Ecological Sites

Allotment - 64083



- Study Plots
40 Acres
- Study Locations
- State Private Public

- Allotment Boundary
- Pasture Boundary
- Ecological Site Boundary

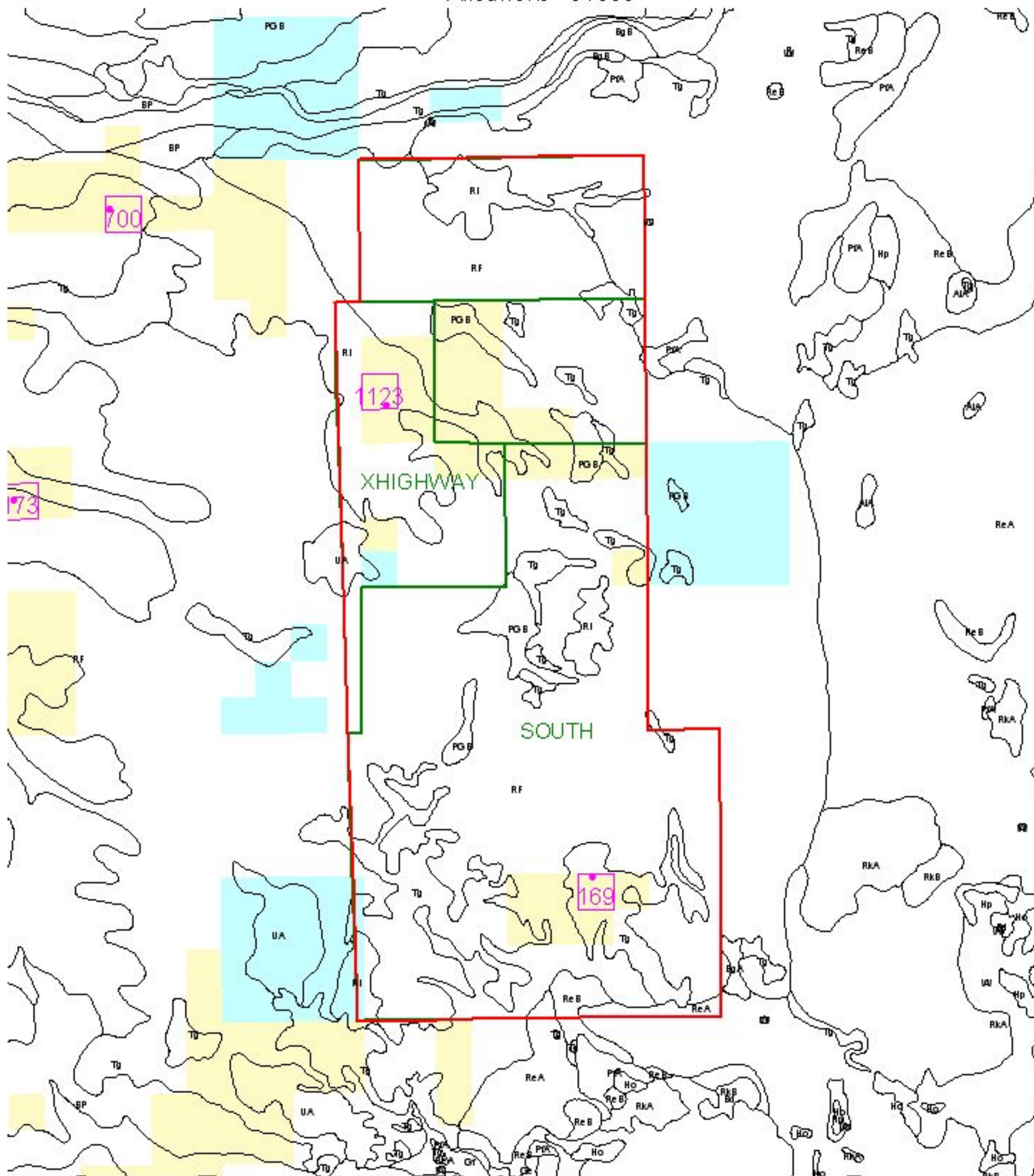
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Rangeland Health Assessment Soil Mapping Units

Allotment - 64083



T15S, R25E

0.5 0 0.5 1 Miles

Study Plots 40 Acres Study Locations

State Private Public

Allotment Boundary
Pasture Boundary
Soil Mapping Units

Produced by the Roswell Field Office
GIS Specialist on July 23, 2004.

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